



May 18, 2017

Mr. Stephen Wolfe
U.S. Environmental Protection Agency
Region 5, Emergency Response Branch
77 W. Jackson Blvd., SE-5J
Chicago, IL 60604

Subject: **Data Validation Report**
 Warren Steel Holdings
 EPA Contract No. EP-S5-13-01
 Technical Direction Document No. S05-0001-1612-007
 Document Tracking No. 1729

Dear Mr. Wolfe:

Tetra Tech, Inc. (Tetra Tech) is submitting this Data Validation Report for eleven solid waste, liquid waste, and wipe samples collected at the Warren Steel Holdings site. The samples were collected on April 27, 2017, and were analyzed by CT Laboratories LLC for toxicity characteristic leaching procedure metals, polychlorinated biphenyls, pH, cyanide reactivity, and sulfide reactivity. Tetra Tech received the final data package on May 11, 2017.

Analytical data were evaluated in general accordance with the EPA *National Functional Guidelines (NFG) for Organic Superfund Methods Data Review* (January 2017) and the EPA *NFG for Inorganic Superfund Methods Data Review* (January 2017).

No rejection of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

If you have any questions regarding this data validation report, please call me at (678) 775-3109.

Sincerely,

A handwritten signature in black ink that reads "Shanna Davis".

Shanna Davis
START Environmental Scientist

Enclosure

cc: Kevin Scott, Tetra Tech Program Manager
 Don Newton, Tetra Tech Project Manager
 TDD File

ATTACHMENT 1

**DATA VALIDATION REPORT
CT LABORATORIES SDG 126978**

DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT

Site Name	Warren Steel Holdings	TDD No.	0001-S05-1612-007
Document Tracking No.	1729		
Data Reviewer (signature and date)	<i>Shanna Davis</i> May 16, 2017	Technical Reviewer (signature and date)	<i>Jessica A. Vickers</i> May 18, 2017
Laboratory Report No.	126978	Laboratory	CT Laboratories/Baraboo, WI
Analyses	Toxicity characteristic leaching procedure (TCLP) metals by EPA 1311, 6010C, and 7470A; polychlorinated biphenyls (PCBs) by EPA 8082A; pH by EPA 9045D; cyanide reactivity by SW-846 Chapter 7; and sulfide reactivity by ASTM D4978		
Samples	Four solid waste samples, two wastewater samples, four liquid waste samples, and one wipe sample. Waste sample WSH-LW-04-042717 was biphasic. Both phases were analyzed as requested.		
Field Duplicate Pairs	None		
Field Blanks	None		

INTRODUCTION

This checklist summarizes the Stage 2A validation performed on the subject laboratory report, in accordance with the U.S. Environmental Protection Agency (EPA) Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use (January 2009). Analytical data were evaluated in general accordance with the EPA National Functional Guidelines (NFG) for Organic Superfund Methods Data Review (January 2017) and the EPA NFG for Inorganic Superfund Methods Data Review (January 2017).

OVERALL EVALUATION

No rejection of results was required for this data package. The results may be used as qualified based on the findings of this validation effort.

Data completeness:

Within Criteria	Exceedance/Notes
Y	

Sample preservation, receipt, and holding times:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT

Method blanks:

Within Criteria	Exceedance/Notes
N	TCLP Metals: The method blank contained barium and silver. However, the amount of barium in the associated sample was greater than 10 times the amount in the blank and silver was non-detect in the associated sample; therefore, no qualifications were warranted.

Field blanks:

Within Criteria	Exceedance/Notes
NA	

Surrogates:

Within Criteria	Exceedance/Notes
N	WSH-LW-04-042717 Top: Recoveries for the PCB surrogates could not be determined due to sample dilution. No qualifications were applied. Remaining surrogate recoveries were within the NFG limits of 30 to 150 percent.

MS/MSD:

Within Criteria	Exceedance/Notes
N	The sulfide reactive MS analysis performed on sample WSH-LW-07-042717 yielded a low recovery. The sample result was non-detect and was qualified as estimated, possibly biased low (flagged "UJ").

Laboratory duplicates:

Within Criteria	Exceedance/Notes
Y	



DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT

Field duplicates:

Within Criteria	Exceedance/Notes
NA	No field duplicates were submitted.

LCS/LCSD:

Within Criteria	Exceedance/Notes
Y	

Sample dilutions:

Within Criteria	Exceedance/Notes
Y	PCBs were analyzed at a 25-times dilution for sample WSH-LW-04-042717 Top PCBs were analyzed at a 5-times dilution for sample WSH-WP-08-042717

Re-extraction and reanalysis:

Within Criteria	Exceedance/Notes
NA	

MDLs/RLs:

Within Criteria	Exceedance/Notes
Y	Results below the RL but above the MDL were qualified by the laboratory as estimated (flagged "J").



DATA VALIDATION CHECKLIST – STAGE 2A
EPA REGION 5 START CONTRACT

Other [specify]:

Within Criteria	Exceedance/Notes
N	The calibration range was exceeded for pH in samples WSH-LW-02-042717, WSH-LW-03-042717, WSH-SW-05-042717, WSH-LW-06-042717, WSH-LW-07-042717, and WSH-SW-09-042717. The laboratory qualified these results with a "X" flag. These results were qualified as estimated (flagged "J").

Overall Qualifications:

See results summary pages attached for changes to the laboratory qualifiers based upon this validation. The following is a list of qualifiers and definitions that may be used for the validation of this data package:

J	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample.
J+	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased high.
J-	The analyte was positively identified; the associated value is the approximate concentration of the analyte in the sample and may be biased low.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated value is the approximate concentration of the analyte in the sample.
R	The sample result is rejected as unusable due to serious deficiencies in one or more quality control criteria. The analyte may or may not be present in the sample.
U	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit).
UJ	The analyte was analyzed for, but was not detected at or above the associated value (reporting limit), which is considered approximate due to deficiencies in one or more quality control criteria.

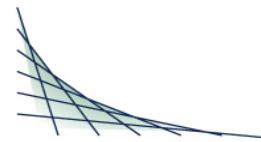


Warren Steel Holdings Sample Results
CT Laboratories, 126978

Sample ID	Analyte	Lab Result	Lab_Qualifier	MDL	RL	Result_Units	Val_Results	Val_Qualifiers
WSH-SW-01-042717	Arsenic	0.013	J	0.004	0.024	mg/L	0.013	J
WSH-SW-01-042717	Barium	0.64		0.00029	0.0018	mg/L	0.64	
WSH-SW-01-042717	Cadmium	0.00062	J	0.0003	0.002	mg/L	0.00062	J
WSH-SW-01-042717	Chromium	0.0056		0.0006	0.004	mg/L	0.0056	
WSH-SW-01-042717	Lead	0.0014	U	0.0014	0.004	mg/L	0.004	U
WSH-SW-01-042717	Selenium	0.0022	U	0.0022	0.013	mg/L	0.013	U
WSH-SW-01-042717	Silver	0.0007	U	0.0007	0.004	mg/L	0.004	U
WSH-SW-01-042717	Mercury	0.00003	U	0.00003	0.00012	mg/L	0.00012	U
WSH-LW-02-042717	pH	0.1	UX	1	0.1	S.U.	0.1	UJ
WSH-LW-03-042717	pH	2	X	1	0.1	S.U.	2	J
WSH-LW-04-042717 TOP	Aroclor-1016	1300	U	1300	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1221	1800	U	1800	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1232	2300	U	2300	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1242	1800	U	1800	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1248	95000		1800	7500	ug/kg	95000	
WSH-LW-04-042717 TOP	Aroclor-1254	2300	U	2300	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1260	1500	U	1500	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1262	1800	U	1800	7500	ug/kg	7500	U
WSH-LW-04-042717 TOP	Aroclor-1268	1300	U	1300	7500	ug/kg	7500	U
WSH-LW-04-042717 BOTTOM	Aroclor-1016	50	U	50	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1221	70	U	70	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1232	90	U	90	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1242	70	U	70	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1248	70	U	70	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1254	90	U	90	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1260	60	U	60	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1262	70	U	70	300	ug/kg	300	U
WSH-LW-04-042717 BOTTOM	Aroclor-1268	50	U	50	300	ug/kg	300	U
WSH-SW-05-042717	pH	14	X	1	0.1	S.U.	14	J
WSH-LW-06-042717	pH	14	X	1	0.1	S.U.	14	J
WSH-LW-07-042717	Cyanide, Reactive	20	U	20	20	mg/kg	20	U
WSH-LW-07-042717	Sulfide Reactive	100	UM	100	100	mg/kg	100	UJ
WSH-LW-07-042717	pH	2	X	1	0.1	S.U.	2	J
WSH-SW-08-042717	Aroclor-1016	58	U	58	350	ug/kg	350	U
WSH-SW-08-042717	Aroclor-1221	82	U	82	350	ug/kg	350	U
WSH-SW-08-042717	Aroclor-1232	110	U	110	350	ug/kg	350	U
WSH-SW-08-042717	Aroclor-1242	82	U	82	350	ug/kg	350	U
WSH-SW-08-042717	Aroclor-1248	82	U	82	350	ug/kg	350	U
WSH-SW-08-042717	Aroclor-1254	110	U	110	350	ug/kg	350	U

Warren Steel Holdings Sample Results
CT Laboratories, 126978

Sample ID	Analyte	Lab Result	Lab_Qualifier	MDL	RL	Result_Units	Val_Results	Val_Qualifiers
WSH-SW-08-042717	Aroclor-1260	70 U		70		350 ug/kg	350 U	
WSH-SW-08-042717	Aroclor-1262	82 U		82		350 ug/kg	350 U	
WSH-SW-08-042717	Aroclor-1268	737		58		350 ug/kg	737	
WSH-WP-08-042717	Aroclor-1016	0.625 U		0.625		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1221	0.875 U		0.875		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1232	1.13 U		1.13		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1242	0.875 U		0.875		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1248	0.875 U		0.875		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1254	1.13 U		1.13		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1260	0.75 U		0.75		3.75 Total ug	3.75 U	
WSH-WP-08-042717	Aroclor-1262	37.9		0.875		3.75 Total ug	37.9	
WSH-WP-08-042717	Aroclor-1268	0.625 U		0.625		3.75 Total ug	3.75 U	
WSH-SW-09-042717	pH	11 X		1		0.1 S.U.	11 J	



ANALYTICAL REPORT

This report at a minimum contains the following information:

- Analytical Report of Test Results
- Description of QC Qualifiers
- Chain of Custody (copy)
- Quality Control Summary
- Case Narrative (if applicable)
- Correspondence with Client (if applicable)

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for parameters where accreditation is required or available, unless otherwise noted in the case narrative.





**REVISED
ANALYTICAL REPORT**

TETRA TECH
DON NEWTON
6777 ENGLE ROAD
SUITE L
MIDDLEBURG HEIGHTS, OH 44130

Project Name: WARREN STEEL HOLDINGS
Project Phase: WARREN, OH
Contract #: 3043
Project #: S05-1612-007
Folder #: 126978

Page 1 of 6
Arrival Temperature: 2.3
Report Date: 05/09/2017
Date Received: 04/28/2017
Reprint Date: 05/11/2017

Purchase Order #: 1111200

CT LAB#: 860944	Sample Description: WSH-SW-01-042717	Client Sample #:	Sampled: 04/27/2017 0845
-----------------	--------------------------------------	------------------	--------------------------

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Metals Results

TCLP Arsenic	0.013	mg/L	0.0040	0.012	0.024	0.024	1.00	J	05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Barium	0.64	mg/L	0.00029	0.00090	0.0018	0.0018	1.00		05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Cadmium	0.00062	mg/L	0.00030	0.0010	0.0020	0.0020	1.00	J	05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Chromium	0.0056	mg/L	0.00060	0.0020	0.0040	0.0040	1.00		05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Lead	<0.0014	mg/L	0.0014	0.0020	0.0040	0.0040	1.00	U	05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Selenium	<0.0022	mg/L	0.0022	0.0065	0.013	0.013	1.00	U	05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Silver	<0.00070	mg/L	0.00070	0.0020	0.0040	0.0040	1.00	U	05/04/2017 07:00	5/6/17 03:40 NAH	EPA 6010C	^
TCLP Mercury	<0.000030	mg/L	0.000030	0.000060	0.00012	0.00012	1.00	U	05/04/2017 07:00	5/8/17 09:53 LJF	EPA 7470A	

CT LAB#: 860979	Sample Description: WSH-LW-02-042717	Client Sample #:	Sampled: 04/27/2017 0915
-----------------	--------------------------------------	------------------	--------------------------

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Inorganic Results

pH	<0.1	S.U.	0.1	0.1	0.1	0.1	1.00	U X	5/11/17 09:00 MER	EPA 9045D	^
----	------	------	-----	-----	-----	-----	------	-----	-------------------	-----------	---

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 860980	Sample Description: WSH-LW-03-042717				Client Sample #:				Sampled: 04/27/2017 0935			
-----------------	--------------------------------------	--	--	--	------------------	--	--	--	--------------------------	--	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Inorganic Results

pH	2	S.U.	0.1	0.1	0.1	0.1	1.00	X		5/5/17 09:00	BKB	EPA 9045D	^
----	---	------	-----	-----	-----	-----	------	---	--	--------------	-----	-----------	---

CT LAB#: 860981	Sample Description: WSH-LW-04-042717 TOP				Client Sample #:				Sampled: 04/27/2017 1100			
-----------------	--	--	--	--	------------------	--	--	--	--------------------------	--	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Organic Results

Aroclor-1016	<1300	ug/kg	1300	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1221	<1800	ug/kg	1800	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1232	<2300	ug/kg	2300	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1242	<1800	ug/kg	1800	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1248	95000	ug/kg	1800	5000	7500	7500	25.00		05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1254	<2300	ug/kg	2300	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1260	<1500	ug/kg	1500	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1262	<1800	ug/kg	1800	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Aroclor-1268	<1300	ug/kg	1300	5000	7500	7500	25.00	U	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Surr: 2,4,5,6-TCMX	0	% Recovery	54			135	25.00	D	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A
Surr: DCBP	0	% Recovery	54			141	25.00	D	05/02/2017 12:15	5/2/17 18:02	JJY	EPA 8082A

CT LAB#: 860982	Sample Description: WSH-LW-04-042717 BOTTOM				Client Sample #:				Sampled: 04/27/2017 1100			
-----------------	---	--	--	--	------------------	--	--	--	--------------------------	--	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Organic Results

Aroclor-1016	<50	ug/kg	50	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
--------------	-----	-------	----	-----	-----	-----	------	---	------------------	--------------	-----	-----------

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis

CT LAB#: 860982	Sample Description: WSH-LW-04-042717 BOTTOM				Client Sample #:				Sampled: 04/27/2017 1100			
Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Aroclor-1221	<70	ug/kg	70	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1232	<90	ug/kg	90	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1242	<70	ug/kg	70	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1248	<70	ug/kg	70	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1254	<90	ug/kg	90	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1260	<60	ug/kg	60	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1262	<70	ug/kg	70	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Aroclor-1268	<50	ug/kg	50	200	300	300	1.00	U	05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Surr: 2,4,5,6-TCMX	119	% Recovery	54			135	1.00		05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A
Surr: DCBP	114	% Recovery	54			141	1.00		05/02/2017 12:15	5/2/17 18:23	JJY	EPA 8082A

CT LAB#: 860983	Sample Description: WSH-SW-05-042717				Client Sample #:				Sampled: 04/27/2017 1130			
Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												

pH	14	S.U.	0.1	0.1	0.1	0.1	1.00	X	5/5/17 09:00	BKB	EPA 9045D	^
----	----	------	-----	-----	-----	-----	------	---	--------------	-----	-----------	---

CT LAB#: 860984	Sample Description: WSH-LW-06-042717				Client Sample #:				Sampled: 04/27/2017 1250			
Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
Inorganic Results												

pH	14	S.U.	0.1	0.1	0.1	0.1	1.00	X	5/5/17 09:00	BKB	EPA 9045D	^
----	----	------	-----	-----	-----	-----	------	---	--------------	-----	-----------	---

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 860985	Sample Description: WSH-LW-07-042717			Client Sample #:					Sampled: 04/27/2017 1300		
-----------------	--------------------------------------	--	--	------------------	--	--	--	--	--------------------------	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Inorganic Results

pH	2	S.U.	0.1	0.1	0.1	0.1	1.00	X	5/5/17 09:00	BKB	EPA 9045D	^
Cyanide, Reactive	<20	mg/kg	20			20	1.00	U	5/4/17 14:10	MER	SW 846 Ch. 7	^
Sulfide Reactive	<100	mg/kg	100			100	1.00	U M	5/4/17 14:25	MER	ASTM D4978	^

CT LAB#: 860987	Sample Description: WSH-SW-08-042717			Client Sample #:					Sampled: 04/27/2017 1425		
-----------------	--------------------------------------	--	--	------------------	--	--	--	--	--------------------------	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Inorganic Results

Solids, Percent	85.5	%	0.1	0.1	0.1	0.1	1.00		5/2/17 10:45	BMM	EPA 8000C
-----------------	------	---	-----	-----	-----	-----	------	--	--------------	-----	-----------

Organic Results

Aroclor-1016	<58	ug/kg	58	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1221	<82	ug/kg	82	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1232	<110	ug/kg	110	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1242	<82	ug/kg	82	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1248	<82	ug/kg	82	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1254	<110	ug/kg	110	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1260	<70	ug/kg	70	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1262	<82	ug/kg	82	230	350	350	1.00	U	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Aroclor-1268	737	ug/kg	58	230	350	350	1.00		05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Surr: 2,4,5,6-TCMX	44	% Recovery	54			135	1.00	S	05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A
Surr: DCBP	112	% Recovery	54			141	1.00		05/02/2017 12:00	5/3/17 18:06	JJY	EPA 8082A

Unless specifically stated to the contrary, soil/sediment/sludge sample results reported on a Dry Weight Basis



CT LAB#: 860988	Sample Description: WSH-SW-09-042717	Client Sample #:				Sampled: 04/27/2017 1455			
-----------------	--------------------------------------	------------------	--	--	--	--------------------------	--	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Inorganic Results

pH	11	S.U.	0.1	0.1	0.1	0.1	1.00	X	5/5/17 09:00	BKB	EPA 9045D	^
----	----	------	-----	-----	-----	-----	------	---	--------------	-----	-----------	---

CT LAB#: 860989	Sample Description: WSH-WP-08-042717	Client Sample #:				Sampled: 04/27/2017 1425			
-----------------	--------------------------------------	------------------	--	--	--	--------------------------	--	--	--

Analyte	Result	Units	DL	DOD LOD	DOD LOQ	RL	DF	Qualifier	Prep Date/Time	Analysis Date/Time	Analyst	Method
---------	--------	-------	----	---------	---------	----	----	-----------	----------------	--------------------	---------	--------

Organic Results

Aroclor-1016	<0.625	Total ug	0.625	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1221	<0.875	Total ug	0.875	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1232	<1.13	Total ug	1.13	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1242	<0.875	Total ug	0.875	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1248	<0.875	Total ug	0.875	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1254	<1.13	Total ug	1.13	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1260	<0.750	Total ug	0.750	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1262	37.9	Total ug	0.875	2.50	3.75	3.75	5.00		05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Aroclor-1268	<0.625	Total ug	0.625	2.50	3.75	3.75	5.00	U	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Surr: 2,4,5,6-TCMX	89.2		70			130	5.00		05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A
Surr: DCBP	136	% Recovery	70			130	5.00	S	05/02/2017 10:50	5/2/17 14:27	JJY	EPA 8082A

Notes:

^ Indicates the laboratory is NELAP accredited for this analyte by the indicated matrix and method. DL (detection limit), LOD (limit of detection), loq (limit of quantitation) as defined by most recent DOD QSM version.

All samples were received intact and properly preserved unless otherwise noted. The results reported relate only to the samples tested. This report shall not be reproduced, except in full, without written approval of this laboratory. The Chain of Custody is attached.

This report has been specifically prepared to satisfy project or program requirements. These results are in compliance with NELAC requirements for the parameters where accreditation is required or available, unless noted in the case narrative.

Submitted by: Brett M. Szymanski
Project Manager
608-356-2760

Reason for Revision The pH result for sample WSH-SW-02-042717 was corrected.

QC Qualifiers	
Code	Description
B	Analyte detected in the associated Method Blank.
C	Toxicity present in BOD sample.
D	Diluted Out.
E	Safe, No Total Coliform detected.
F	Unsafe, Total Coliform detected, no E. Coli detected.
G	Unsafe, Total Coliform detected and E. Coli detected.
H	Holding time exceeded.
I	BOD incubator temperature was outside acceptance limits during test period.
J	Estimated value.
L	Significant peaks were detected outside the chromatographic window.
M	Matrix spike and/or Matrix Spike Duplicate recovery outside acceptance limits.
N	Insufficient BOD oxygen depletion.
O	Complete BOD oxygen depletion.
P	Concentration of analyte differs more than 40% between primary and confirmation analysis.
Q	Laboratory Control Sample outside acceptance limits.
R	See Narrative at end of report.
S	Surrogate standard recovery outside acceptance limits due to apparent matrix effects.
T	Sample received with improper preservation or temperature.
U	Analyte concentration was below detection limit.
V	Raised Quantitation or Reporting Limit due to limited sample amount or dilution for matrix background interference.
W	Sample amount received was below program minimum.
X	Analyte exceeded calibration range.
Y	Replicate/Duplicate precision outside acceptance limits.
Z	Specified calibration criteria was not met.

Current CT Laboratories Certifications

Wisconsin (WDNR) Chemistry ID# 157066030
Wisconsin (DATCP) Bacteriology ID# 105-289
Louisiana NELAP (primary) ID# ACC20160002
Illinois NELAP Lab ID# 200073
Kansas NELAP Lab ID# E-10368
Virginia NELAP Lab ID# 460203
Maryland Lab ID# WI00061
ISO/IEC 17025-2005 A2LA Cert # 3806.01
DoD-ELAP A2LA 3806.01
GA EPD Stipulation ID ACC20160002

QC SUMMARY REPORT

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Duplicate

Analytical Run #:	137449	Analysis Date:	05/02/2017	Prep Batch #:		Matrix:	SOIL		
CTLab #:	862970	Analysis Time:	10:45	Prep Date/Time:		Method:	SW8000C		
Parent Sample #:	860987	Analyst:	BMM	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Solids, Percent	91.3	%		85.5				7	8

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Duplicate

Analytical Run #:	137568	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	WASTE		
CTLab #:	863365	Analysis Time:	14:25	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:	860985	Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	100	mg/kg	<100	U				0	20

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Water

Analytical Run #:	137568	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	LIQUID		
CTLab #:	863478	Analysis Time:	14:25	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:		Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	2.00	mg/L			2.00	100	70 --- 130		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Water

Analytical Run #:	137568	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	LIQUID		
CTLab #:	863479	Analysis Time:	14:25	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:		Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	2	mg/L		U	0			2	

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Matrix Spike Soil

Analytical Run #:	137568	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	WASTE		
CTLab #:	863480	Analysis Time:	14:25	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:	860985	Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Sulfide Reactive	100	mg/kg	BDL	U	100	0	70 --- 130		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Duplicate

Analytical Run #:	137569	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	WASTE		
CTLab #:	863369	Analysis Time:	14:10	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:	860985	Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20.0	mg/kg	<20.0	U				0	20

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Soil

Analytical Run #:	137569	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	SOLID		
CTLab #:	863367	Analysis Time:	14:10	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:		Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20.0	mg/kg			20.0	100	70 --- 130		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Soil

Analytical Run #:	137569	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	SOLID		
CTLab #:	863368	Analysis Time:	14:10	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:		Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20	mg/kg		U	0.00			8	

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Matrix Spike Soil

Analytical Run #:	137569	Analysis Date:	05/04/2017	Prep Batch #:		Matrix:	WASTE		
CTLab #:	863370	Analysis Time:	14:10	Prep Date/Time:		Method:	SW7.3		
Parent Sample #:	860985	Analyst:	MER	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Cyanide, Reactive	20.0	mg/kg	BDL		20.0	100	70 --- 130		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Duplicate

Analytical Run #:	137605	Analysis Date:	05/05/2017	Prep Batch #:		Matrix:	WASTE
CTLab #:	863937	Analysis Time:	09:00	Prep Date/Time:		Method:	SW9045C
Parent Sample #:	860985	Analyst:	BKB	Prep Analyst:			

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
pH	2	S.U.	2					0	1

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Duplicate

Analytical Run #:	137605	Analysis Date:	05/05/2017	Prep Batch #:		Matrix:	SOIL		
CTLab #:	863938	Analysis Time:	09:00	Prep Date/Time:		Method:	SW9045C		
Parent Sample #:	860988	Analyst:	BKB	Prep Analyst:					
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
pH	11	S.U.	11					0	1

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Duplicate

Analytical Run #:	137611	Analysis Date:	05/06/2017	Prep Batch #:	62254	Matrix:	TCLP
CTLab #:	863186	Analysis Time:	03:55	Prep Date/Time:	05/04/2017 14:00	Method:	SW6010
Parent Sample #:	860944	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.0123	mg/L	0.013				24	6	20
Barium	0.696	mg/L	0.64				1.80	8	20
Cadmium	0.000682	mg/L	0.00062				2.0	10	20
Chromium	0.00572	mg/L	0.0056				4.0	2	20
Lead	0.00140	mg/L	<0.00140 U				4.0	0	20
Selenium	0.00220	mg/L	<0.00220 U				13.0	0	20
Silver	0.000906	mg/L	<0.000700				4.0	200	20

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Water

Analytical Run #:	137611	Analysis Date:	05/06/2017	Prep Batch #:	62254	Matrix:	LIQUID
CTLab #:	863185	Analysis Time:	03:27	Prep Date/Time:	05/04/2017 14:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.853	mg/L			0.800	107	80 --- 120		
Barium	0.844	mg/L			0.800	106	80 --- 120		
Cadmium	0.0200	mg/L			0.0200	100	80 --- 120		
Chromium	0.0791	mg/L			0.0800	99	80 --- 120		
Lead	0.213	mg/L			0.200	106	80 --- 120		
Selenium	0.865	mg/L			0.800	108	80 --- 120		
Silver	0.0205	mg/L			0.0200	102	80 --- 120		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Water

Analytical Run #:	137611	Analysis Date:	05/06/2017	Prep Batch #:	62254	Matrix:	LIQUID
CTLab #:	863184	Analysis Time:	03:34	Prep Date/Time:	05/04/2017 14:00	Method:	SW6010
Parent Sample #:		Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.004	mg/L		U	0		0.012		
Barium	0.000748	mg/L			0		00090		
Cadmium	0.0003	mg/L		U	0		.0010		
Chromium	0.0006	mg/L		U	0		.0020		
Lead	0.0014	mg/L		U	0		.0020		
Selenium	0.0022	mg/L		U	0		.0065		
Silver	0.000832	mg/L			0		.0020		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Matrix Spike Duplicate Water

Analytical Run #:	137611	Analysis Date:	05/06/2017	Prep Batch #:	62254	Matrix:	TCLP
CTLab #:	863188	Analysis Time:	04:09	Prep Date/Time:	05/04/2017 14:00	Method:	SW6010
Parent Sample #:	863187	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.930	mg/L	0.013		0.800	115	80 --- 120	0	20
Barium	1.53	mg/L	0.64		0.800	111	80 --- 120	1	20
Cadmium	0.0186	mg/L	0.00062		0.0200	90	80 --- 120	1	20
Chromium	0.0798	mg/L	0.0056		0.0800	93	80 --- 120	1	20
Lead	0.178	mg/L	BDL		0.200	89	80 --- 120	1	20
Selenium	0.977	mg/L	BDL		0.800	122	80 --- 120	2	20
Silver	0.0217	mg/L	BDL		0.0200	108	80 --- 120	0	20

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Matrix Spike Water

Analytical Run #:	137611	Analysis Date:	05/06/2017	Prep Batch #:	62254	Matrix:	TCLP
CTLab #:	863187	Analysis Time:	04:02	Prep Date/Time:	05/04/2017 14:00	Method:	SW6010
Parent Sample #:	860944	Analyst:	NAH	Prep Analyst:	NAH		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Arsenic	0.934	mg/L	0.013		0.800	115	80 --- 120		
Barium	1.52	mg/L	0.64		0.800	110	80 --- 120		
Cadmium	0.0188	mg/L	0.00062		0.0200	91	80 --- 120		
Chromium	0.0808	mg/L	0.0056		0.0800	94	80 --- 120		
Lead	0.180	mg/L	BDL		0.200	90	80 --- 120		
Selenium	0.993	mg/L	BDL		0.800	124	80 --- 120		
Silver	0.0216	mg/L	BDL		0.0200	108	80 --- 120		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Water

Analytical Run #:	137621	Analysis Date:	05/08/2017	Prep Batch #:	62247	Matrix:	LIQUID		
CTLab #:	863101	Analysis Time:	09:14	Prep Date/Time:	05/05/2017 08:30	Method:	SW7470A		
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF				
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.00270	mg/L			0.00300	90	80 --- 120		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Water

Analytical Run #:	137621	Analysis Date:	05/08/2017	Prep Batch #:	62247	Matrix:	LIQUID		
CTLab #:	863100	Analysis Time:	09:16	Prep Date/Time:	05/05/2017 08:30	Method:	SW7470A		
Parent Sample #:		Analyst:	LJF	Prep Analyst:	LJF				
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Mercury	0.00003	mg/L		U	0		00006		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Duplicate Soil

Analytical Run #:	137467	Analysis Date:	05/02/2017	Prep Batch #:	62206	Matrix:	SOLID
CTLab #:	862050	Analysis Time:	14:48	Prep Date/Time:	05/02/2017 0:50	Method:	SW8082
Parent Sample #:	862049	Analyst:	JJY	Prep Analyst:	RED		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	6030	ug/kg			5000	121	47 --- 134	0	30
Aroclor-1221	0				12500	70	--- 130		30
Aroclor-1232	0				12500	70	--- 130		30
Aroclor-1242	0				12500	70	--- 130		30
Aroclor-1248	0				12500	70	--- 130		30
Aroclor-1254	0				12500	67	--- 135		30
Aroclor-1260	5980	ug/kg			5000	120	53 --- 140	1	30
Aroclor-1262	0				12500	70	--- 130		30
Aroclor-1268	0				12500	70	--- 130		30

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Soil

Analytical Run #:	137467	Analysis Date:	05/02/2017	Prep Batch #:	62206	Matrix:	SOLID		
CTLab #:	862049	Analysis Time:	13:44	Prep Date/Time:	05/02/2017 0:50	Method:	SW8082		
Parent Sample #:		Analyst:	JJY	Prep Analyst:	RED				
<hr/>									
Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	6030	ug/kg			5000	121	47 --- 134	30	
Aroclor-1221	0				12500	0	70 --- 130	30	
Aroclor-1232	0				12500	0	70 --- 130	30	
Aroclor-1242	0				12500	0	70 --- 130	30	
Aroclor-1248	0				12500	0	70 --- 130	30	
Aroclor-1254	0				12500	0	67 --- 135	30	
Aroclor-1260	5950	ug/kg			5000	119	53 --- 140	30	
Aroclor-1262	0				12500	0	70 --- 130	30	
Aroclor-1268	0				12500	0	70 --- 130	30	

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Soil

Analytical Run #:	137467	Analysis Date:	05/02/2017	Prep Batch #:	62206	Matrix:	SOLID
CTLab #:	862048	Analysis Time:	13:23	Prep Date/Time:	05/02/2017 10:50	Method:	SW8082
Parent Sample #:		Analyst:	JY	Prep Analyst:	RED		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	5	ug/kg		U	0		15		
Aroclor-1221	7	ug/kg		U	0		15		
Aroclor-1232	9	ug/kg		U	0		15		
Aroclor-1242	7	ug/kg		U	0		15		
Aroclor-1248	7	ug/kg		U	0		15		
Aroclor-1254	9	ug/kg		U	0		15		
Aroclor-1260	6	ug/kg		U	0		15		
Aroclor-1262	7	ug/kg		U	0		15		
Aroclor-1268	5	ug/kg		U	0		15		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Duplicate Soil

Analytical Run #:	137472	Analysis Date:	05/02/2017	Prep Batch #:	62137	Matrix:	SOLID
CTLab #:	860213	Analysis Time:	18:45	Prep Date/Time:	05/02/2017 12:15	Method:	SW8082
Parent Sample #:	860212	Analyst:	JJY	Prep Analyst:	KLD		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	6210	ug/kg			5000	124	47 --- 134	1	30
Aroclor-1221	0				5000	70	--- 130		30
Aroclor-1232	0				5000	70	--- 130		30
Aroclor-1242	0				5000	70	--- 130		30
Aroclor-1248	0				5000	70	--- 130		30
Aroclor-1254	0				5000	67	--- 135		30
Aroclor-1260	6270	ug/kg			5000	125	53 --- 140	1	30
Aroclor-1262	0				5000	70	--- 130		30
Aroclor-1268	0				5000	70	--- 130		30

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Soil

Analytical Run #:	137472	Analysis Date:	05/02/2017	Prep Batch #:	62137	Matrix:	SOLID
CTLab #:	860212	Analysis Time:	16:14	Prep Date/Time:	05/02/2017 12:15	Method:	SW8082
Parent Sample #:		Analyst:	JJY	Prep Analyst:	KLD		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	6270	ug/kg			5000	125	47 --- 134	30	
Aroclor-1221	0				5000	0	70 --- 130	30	
Aroclor-1232	0				5000	0	70 --- 130	30	
Aroclor-1242	0				5000	0	70 --- 130	30	
Aroclor-1248	0				5000	0	70 --- 130	30	
Aroclor-1254	0				5000	0	67 --- 135	30	
Aroclor-1260	6320	ug/kg			5000	126	53 --- 140	30	
Aroclor-1262	0				5000	0	70 --- 130	30	
Aroclor-1268	0				5000	0	70 --- 130	30	

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Soil

Analytical Run #:	137472	Analysis Date:	05/02/2017	Prep Batch #:	62137	Matrix:	SOLID
CTLab #:	860211	Analysis Time:	15:53	Prep Date/Time:	05/02/2017 12:15	Method:	SW8082
Parent Sample #:		Analyst:	JY	Prep Analyst:	KLD		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	5	ug/kg		U	0		15		
Aroclor-1221	7	ug/kg		U	0		15		
Aroclor-1232	9	ug/kg		U	0		15		
Aroclor-1242	7	ug/kg		U	0		15		
Aroclor-1248	7	ug/kg		U	0		15		
Aroclor-1254	9	ug/kg		U	0		15		
Aroclor-1260	6	ug/kg		U	0		15		
Aroclor-1262	7	ug/kg		U	0		15		
Aroclor-1268	5	ug/kg		U	0		15		

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Lab Control Spike Soil

Analytical Run #:	137491	Analysis Date:	05/03/2017	Prep Batch #:	62205	Matrix:	SOLID
CTLab #:	862043	Analysis Time:	17:23	Prep Date/Time:	05/02/2017 12:00	Method:	SW8082
Parent Sample #:		Analyst:	JY	Prep Analyst:	KLD		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	514	ug/kg			500	103	47 --- 134	30	
Aroclor-1221	0				500	0	70 --- 130	30	
Aroclor-1232	0				500	0	70 --- 130	30	
Aroclor-1242	0				500	0	70 --- 130	30	
Aroclor-1248	0				500	0	70 --- 130	30	
Aroclor-1254	0				500	0	67 --- 135	30	
Aroclor-1260	522	ug/kg			500	104	53 --- 140	30	
Aroclor-1262	0				500	0	70 --- 130	30	
Aroclor-1268	0				500	0	70 --- 130	30	

TETRA TECH

Project Name: WARREN STEEL HOLDINGS

SDG #: 0

Folder #: 126978

Project Number: S05-1612-007

Method Blank Soil

Analytical Run #:	137491	Analysis Date:	05/03/2017	Prep Batch #:	62205	Matrix:	SOLID
CTLab #:	862042	Analysis Time:	17:02	Prep Date/Time:	05/02/2017 12:00	Method:	SW8082
Parent Sample #:		Analyst:	JY	Prep Analyst:	KLD		

Analyte	QC sample result	Units	Parent sample result	Qualifier(s)	Spike Amount Added	% Recovery	Control Limits	RPD	RPD Limit
Aroclor-1016	5	ug/kg		U	0		15		
Aroclor-1221	7	ug/kg		U	0		15		
Aroclor-1232	9	ug/kg		U	0		15		
Aroclor-1242	7	ug/kg		U	0		15		
Aroclor-1248	7	ug/kg		U	0		15		
Aroclor-1254	9	ug/kg		U	0		15		
Aroclor-1260	6	ug/kg		U	0		15		
Aroclor-1262	7	ug/kg		U	0		15		
Aroclor-1268	5	ug/kg		U	0		15		

Sample Condition Report

Folder #: 126978	Print Date / Time:	04/28/2017	10:08	
Client: TETRA TECH	Received Date / Time / By:	04/28/2017	09:40	BNA
Project Name: WARREN STEEL HOLDINGS	Log-In Date / Time / By:	04/28/2017	10:06	BNA
Project Phase: WARREN, OH	Project #:	S05-1612-007	PM:	BMS
Coolers: 5415	Temperature:	2.3 C	On Ice:	Y
Custody Seals Present :	COC Present?:	Y	Complete?	Y
Seal Intact?	Numbers:	SIGNED AND DATED		
Ship Method: FEDEX	Tracking Number:	809945954997		
Adequate Packaging: Y	Temp Blank Enclosed?	Y		

Notes: THE SAMPLES WERE RECEIVED IN GOOD CONDITION ON ICE.

NO CUSTODY SEALS WERE PRESENT UPON RECEIPT - TAPE WAS INTACT.

SAMPLE WSH-LW-04-042717 IS BIPHASIC. PER THE CLIENT'S INSTRUCTIONS, BOTH PHASES WILL BE ANALYZED FOR PCBs.

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860944 WSH-SW-01-042717				
	SOLIDS	1	/	HG,ICP
	SOLIDS	1	/	HG,ICP
	Total # of Containers of Type (SOLIDS) = 2			
860979 WSH-LW-02-042717				
	UNPRES GL	1	/	pH
	UNPRES GL	1	/	pH
	Total # of Containers of Type (UNPRES GL) = 2			
860980 WSH-LW-03-042717				
	UNPRES GL	1	/	pH
	Total # of Containers of Type (UNPRES GL) = 1			
860981 WSH-LW-04-042717 TOP				
	UNPRES GL	1	/	PCB
	Total # of Containers of Type (UNPRES GL) = 1			
860982 WSH-LW-04-042717 BOTTOM				

126978

UNPRES GL 1 /
Total # of Containers of Type (UNPRES GL) = 1

PCB

Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860983 WSH-SW-05-042717	UNPRES GL 1 /			%SOL,pH
	Total # of Containers of Type (UNPRES GL) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860984 WSH-LW-06-042717	UNPRES GL 1 /			pH
	Total # of Containers of Type (UNPRES GL) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860985 WSH-LW-07-042717	UNPRES GL 1 /			%SOL,CN React,pH,S2 React
	Total # of Containers of Type (UNPRES GL) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860987 WSH-SW-08-042717	UNPRES GL 1 /			%SOL,PCB
	Total # of Containers of Type (UNPRES GL) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860988 WSH-SW-09-042717	SOLID 1 /			%SOL,pH
	Total # of Containers of Type (SOLID) = 1			
Sample ID / Description	Container Type	Cond. Code	pH OK?/Filtered?	Tests
860989 WSH-WP-08-042717	UNPRES GL 1 /			PCB
	Total # of Containers of Type (UNPRES GL) = 1			

Condition Code Condition Description
1 Sample Received OK

126978

CHAIN OF CUSTODY

Page 1 of 1

Company: Tetra Tech

Project Contact:

Don Newton

Telephone:

419-262-0108

Project Name:

Warren Steel Holdings

Project #: 1612-007

Location: Warren, OH

Sampled By: DN, AL

CT LABORATORIES

Folder #: 126978

Company: TETRA TECH

Project: WARREN STEEL HOLD

Logged By: BNA PM BM

1230 Lange Court, Baraboo, WI 53913
608-356-2760 Fax 608-356-2766
www.ctlaboratories.com

Report To:

EMAIL:

Company:

Address:

don.newton@tetratech.com

Tetra Tech

6777 Engle Rd.

Middlebury Heights, OH

44130

Invoice To:*

EMAIL:

Company:

Address:

Program:

SM RCRA SDWA NPDES

Solid Waste Other _____

D#

*Party listed is responsible for payment of invoice as per CT Laboratories' terms and conditions

Client Special Instructions

* 02 contains Sulfuric Acid
 * 03 contains acidic liquid (pH=1)
 * 08 contains a wipe sample + solid sample
 * 06 contains high pH=14

Matrix:
 GW - groundwater SW - surface water WW - wastewater DW - drinking water
 S - soil/sediment SL - sludge A - air M - misc/waste

Collection					Filtered? Y/N	ANALYSES REQUESTED										Total # Containers	Designated MS/MSD	Turnaround Time <input checked="" type="checkbox"/> Normal <input type="checkbox"/> RUSH*	Date Needed:	Rush analysis requires prior CT Laboratories' approval Surcharges: 24 hr 200% 2-3 days 100% 4-9 days 50%
Date	Time	Matrix	Grab/ Comp	Sample #		Sample ID Description	Pb	Hg	PCB	Reactivity										
4/27/17	0845	S	G			WSH-SW-01-042717	X										2		860944	
	0915	L	G			WSH-LW-02-042717		X									2		860959	
	0935	L	G			WSH-LW-03-042717		X									1		860980	
	1100	WW	G			WSH-LW-04-042717		X	X								1		860981 / 860982	
	1130	S	G			WSH-SW-05-042717		X									1		860983	
	1250	WW	G			WSH-LW-06-042717		X									1		860984	
	1300	L	G			WSH-LW-07-042717		X	X								1		860985	
	1425	S	G			WSH-SW-08-042717		X	X								1		860987	
	1455	S	G			WSH-SW-09-042717		X									1		860988	
▼	1425	M	G			WSH-WP-08-042717		X									1		860989	

Relinquished By:

Don Newton

Date/Time
4/27/17 1815

Received By:

Barry

Date/Time
4-28-17 0940

Lab Use Only

Ice Present Yes No
Temp 230 IR Gun 14
Cooler # 5415

Received by:

Date/Time

Received for Laboratory by:

Barry

Date/Time
4-28-17 1006

Ice Present Yes No
Temperature 73
Initials BR
Date 4-28-17 Time 0940
Cooler # 5215

ORIGIN ID:CLEA (312) 201-7796
TETRA TECH INC GOVT
SUITE L
6777 ENGLE RD STE L
CLEVELAND, OH 441307941
UNITED STATES US

SHIP DATE: 27APR17
ACTWGT: 37.10 LB
CAD: /POS1801
DIMS: 23x14x14 IN
BILL SENDER

TO RECEIVING
CT LABORATORIES
1230 LANGE CT

BARABOO WI 53913

(608) 366-2780
TRN:
PO:

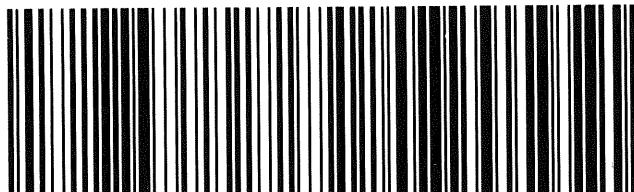
REF:

DEPT:

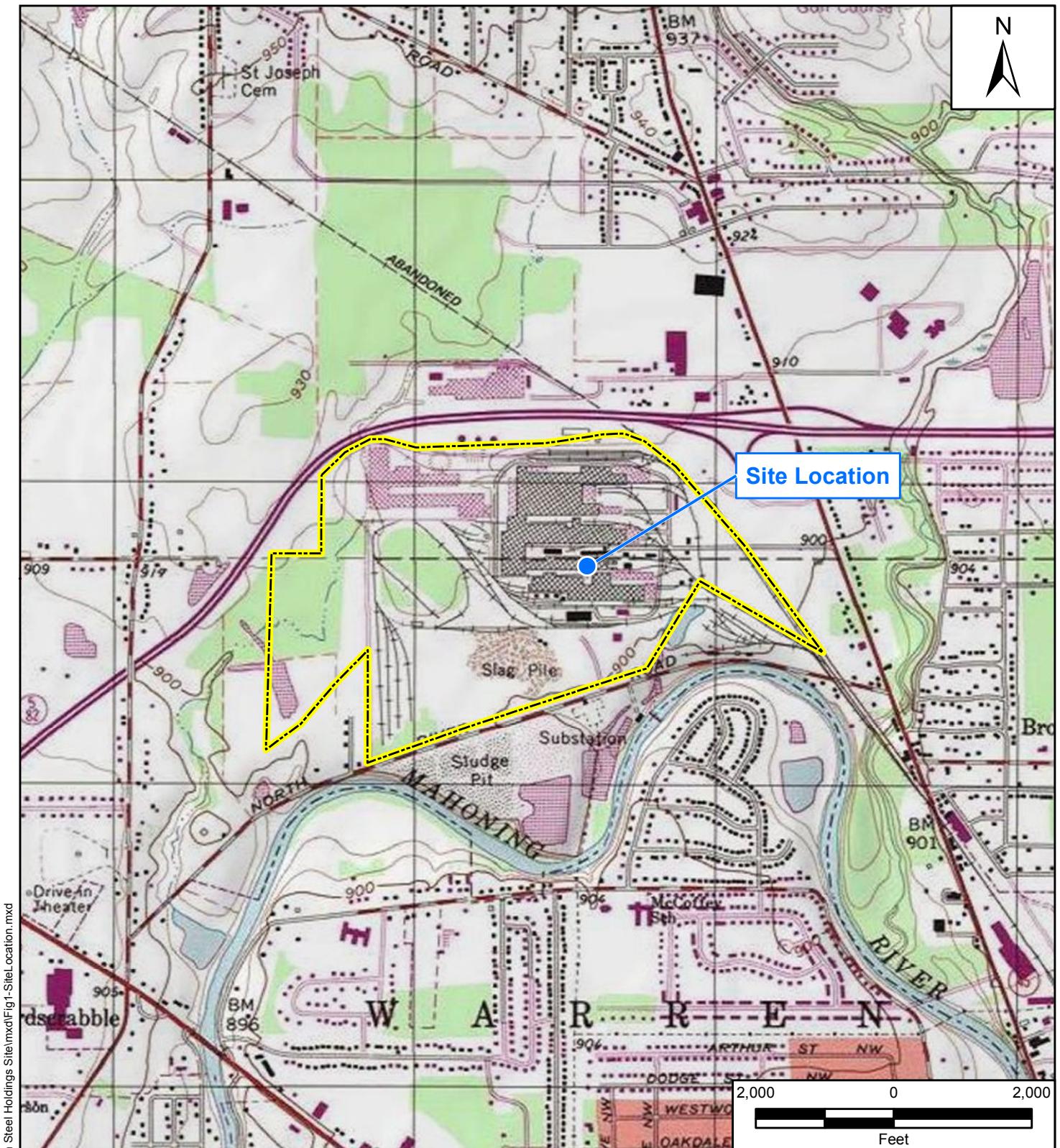


FRI - 28 APR 10:30A
PRIORITY OVERNIGHT

NA MSNA 53913
WI-US MSN



Align Open End of FedEx Touch Here



Reference Map



Legend

Approximate Site Boundary

Source: USGS 7.5-Minute Topographic Quadrangle Map
Warren, OH 1994

Warren Steel Holdings Site
4000 Mahoning Avenue
Warren, Trumbull County, Ohio

Figure 1
Site Location Map



Prepared For: EPA

Prepared By: Tetra Tech, Inc.



File Path: G:\GI\G9026-START\IV\Ohio\Warren Steel Holdings Site\mxdlFig2-Site1.mxd\Fig2-Site1.mxd



Legend

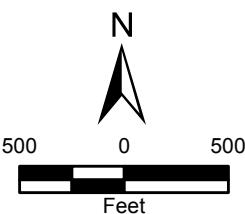
■ Approximate Site Boundary

Source: Bing Maps Road 2013

TDD No.: S05-0001-1612-007

Date Saved: 6/14/2017

EPA Contract No.: EP-S5-13-01



Warren Steel Holdings Site
4000 Mahoning Avenue
Warren, Trumbull County, Ohio

Figure 2
Site Layout Map

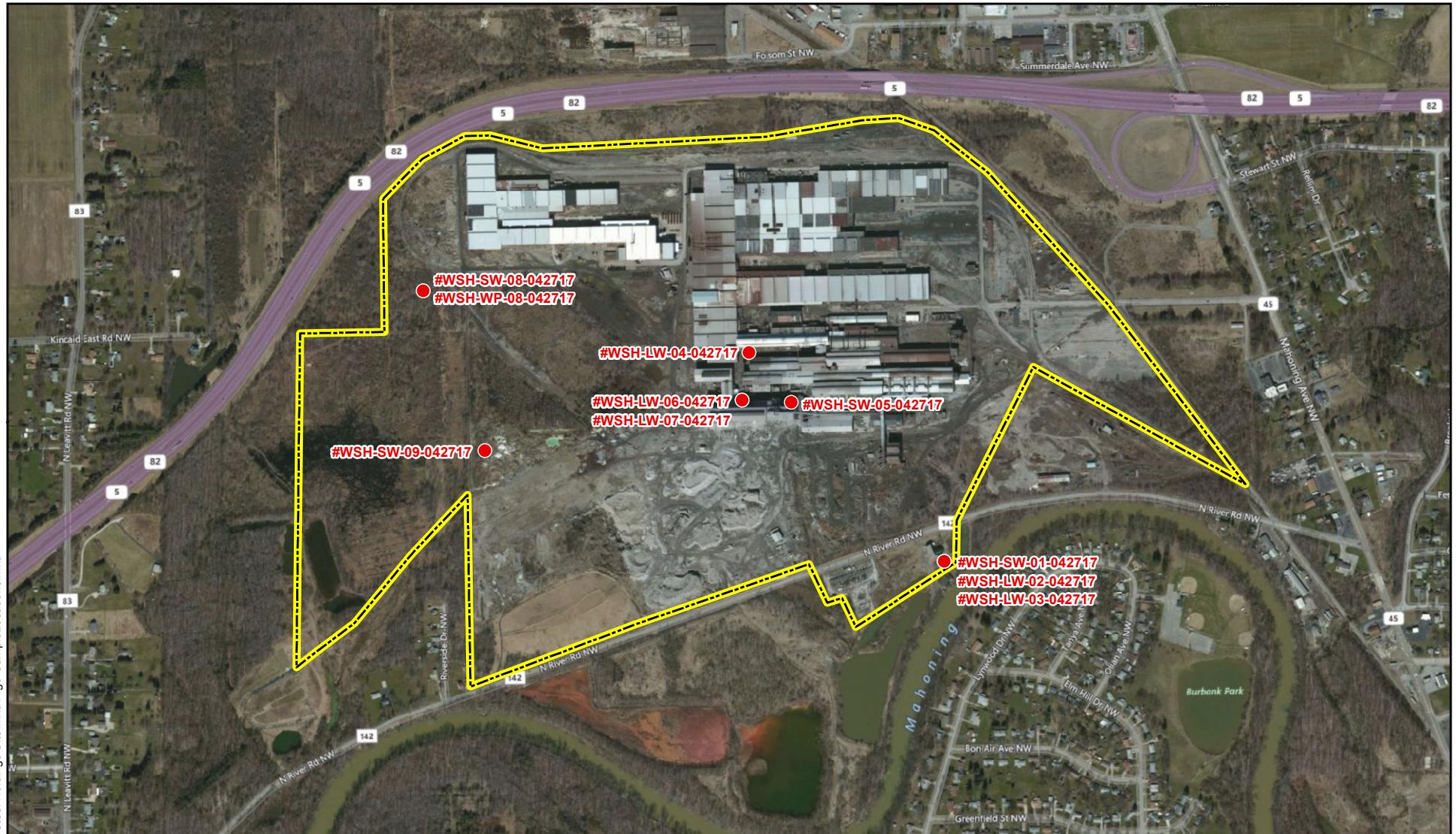


TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

**Legend**

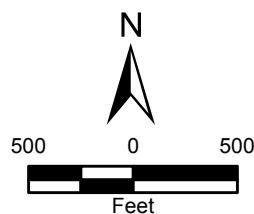
- Sample Location
- Approximate Site Boundary

Source: Bing Maps Road 2013

TDD No.: S05-0001-1612-007

Date Saved: 6/14/2017

EPA Contract No.: EP-S5-13-01



Warren Steel Holdings Site
4000 Mahoning Avenue
Warren, Trumbull County, Ohio

Figure 3
Sampling Locations



TETRA TECH

Prepared For: EPA

Prepared By: Tetra Tech Inc.

Coordinate System: GCS WGS 1984
Datum: WGS 1984
Units: Degree

PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 1	
Direction: North	
Description: View of sulfuric acid container located inside the wastewater treatment plant north building. This is the location of sample #WSH-LW-02-042717. Field screening and laboratory results indicated the liquid in this tote had a pH of 1.	
Date: 4/27/2017	

Photo: 2	
Direction: North	
Description: View of additional sulfuric acid totes located outside the wastewater treatment plant building.	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 3	 A photograph showing two large white cylindrical tanks, likely secondary containment for hazardous liquids, positioned behind a blue corrugated metal building. The tanks are situated on a rusted metal platform. A yellow pipe system connects the tanks to the building. The ground in the foreground is grassy and appears to be a construction or industrial area.
Direction: West	
Description: View of secondary containment structure behind the WWTP. Field screening and laboratory results indicated the liquid inside the containment had a pH of 1. Location of sample # WSH-LW-03-042717. Liquid inside containment was pumped out for treatment and disposal on 4-27-17.	
Date: 4/27/2017	

Photo: 4	 A photograph of a large electrical substation. The foreground is a field of tall grass and weeds. In the background, there are several large electrical structures, including tall towers with insulators and a complex network of metal beams and wires. The sky is overcast.
Direction: West	
Description: View of the site electrical substation located near the wastewater treatment building. Substation will be evaluated for PCB-containing equipment as part of site remediation measures in the future.	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 5	
Direction: North	
Description: View of "PCB Pit" located on western portion of manufacturing warehouse. This pit was the location of sample #WSH-LW-04-042717. Laboratory results indicated the oil in the pit contained 95 ppm PCBs.	
Date: 4/27/2017	

Photo: 6	
Direction: South	
Description: View of sulfuric acid totes located inside the western manufacturing warehouse. Suspect asbestos containing pipe wrap material is visible on top of totes.	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 7	
Direction: South	
Description: View of "super sack" area inside a cold storage warehouse located on the western portion of site. This was the location of sample #WSH-SW-05-042717. Laboratory results indicated this material had a pH of 14.	
Date: 4/27/2017	

Photo: 8	
Direction: North	
Description: View of CL-427 drum located inside the U.S. Filter building. Drum was labeled as an corrosive/oxidizer. Location of sample #WSH-LW-07-042717.	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 9	
Direction: Not applicable	
Description: View of the chemistry lab interior.	
Date: 4/27/2017	

Photo: 10	
Direction: Not applicable	
Description: View of the chemistry lab interior	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 11	
Direction: East	
Description: View of raw material stored inside the Well Chlorination building.	
Date: 4/27/2017	

Photo: 12	
Direction: North	
Description: View of orphan drums stored inside the cold storage warehouse on the west side of the site.	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 13	
Direction: East	
Description: View of transformers stored on pallets inside the main warehouse near the southwest portion of the plant.	
Date: 4/27/2017	

Photo: 14	
Direction: East	
Description: Example of graffiti inside the plant and suspect asbestos containing material located on the floor throughout the west warehouse building.	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 15	
Direction: South	
Description: View of miscellaneous containers stored on site near the southwest portion of the plant	
Date: 4/27/2017	

Photo: 16	
Direction: Northwest	
Description: View of abandoned transformers located on the northwest portion of the site. Location of samples #WSH-SW-08-042717 and #WSH-WP-08-042717	
Date: 4/27/2017	



PHOTOGRAPHIC DOCUMENTATION LOG

Photo: 17	
Direction: North	
Description: Example of lime piles located on the western portion of the site. Location of sample #WSH-SW-09-042717.	
Date: 4/27/2017	

Photo: 18	
Direction: West	
Description: View of CL-2840 drum inside U.S Filter building. Drum was labeled as corrosive. This was location of sample #WSH-LW-06-042717.	
Date: 4/27/2017	





INCH

1

Name _____

START FIELD LOGBOOK

Logbook Tracking Number CL068

Site Name Warren Steel

Issue to Jason, Cashmere

Date Issued 12/19/16

TDD # 0301-1G12-007

CONTENTS



RiteintheRain.com

2 Warren Steel
12/19/10

Weather: 19°, winds SW 2 mph,
humidity. 30.76" Hg.

1000 JRC onsite sign in drive site.
S. side scrap metal ops.
have ceased Several trans-
formers appear to be
leaking / have leaked along
western portion of site
along river. 3 sulfuric
acid totes. 4 unknown
drums. Sample PB pit,
unknown size + depth.

Sample unknown plastic
drums lining thru access.
1 sample of super sack
storage area. Sample slag
piles for metals.

KG1 waste by baghouse,
dozer containers. Approximately
3 transformers on western
portion of site, ~5 totes
sulfuric acid, ~11 totes
hypochlorite solution, ~50

Warren, OH
USEPA

3 12/19/10 cont.

plastic 55-gal. drums, that
appear to contain water, can't
be verified. drums are not
labelled + are lining access
road between buildings, ~
60 super-sacs containing
unknown white powder, ~
10 drums likely containing oil,
it is not labelled, non-PCD,
~ 2 totes of water/glycol/hydraulic
fluid, 4 caster mold palletts, +
6 KG1 waste containers.
START/EPA did not have
access to the chemistry lab
or WWTP + could not verify
chemicals or hazardous materials
in these 2 areas.

1230 START/EPA/OEPA offsite.

JRC

⁴ 4/27/17 Warren Steel Holdings

Weather: sun 60's

- 0800 START (Newton + Little) on-site
- Meet OSC's Cashmore + Wolfe
- Check-in with security, Safety
Meeting, Discuss SOW.

0820 Make to Treatment Plant property
(off site access). Enter bldg.,
survey all areas. Radiation = 10 MR

-0845 Collect sample of filter waste "cake"
stored in 20 yd³ roll-off box
on south end of Blue Tx Bldg.
(#01 for TCEP metals analysis)

0715 Collect sulfuric acid tote sample
(2 outside, 3 inside) from Blue Tx Bldg
(#02 - analyze for pH... field
confirmation pH of 1-2)

0735 Collect sample of liquid inside the
secondary containment pit behind the
Blue Tx Bldg. (See photo). This was
the above ground pit on north side.
⇒ OSC Wolfe authorized ER cleanup of
this liquid for later in the day.

pH of liquid was 1 on test strip.
2,000-gal AST + 1000-gal AST were

WSH

⁵ 4/27/17

above containment. 2K AST was
labeled as Ferric Chloride. There
was a below grade pit adjacent to
the south of the 2nd containment
that was also full of liquid. The
liquid had a pH of 5-6 on test
strip during field confirmation.

1045 Looked inside brick pump house
bldg. to south of Blue Tx Bldg.
Interior of bldg. did not contain
significant findings indicative of threat.

1048 Looked @ substation near Tx
plant. Area was fenced in and not
accessed due to safety concerns
EPA + START took inventory of T1
in substation... 5 - large, 10 - medium +
20 - small transformers inside fence. OSC
Wolfe indicated future cleanup/assessing
this area would fall under a diff. TDD.

1100 Make back to main plant +
enter @ PCB P.t Area. OSC
Cashmore + START Newton survey
cold storage bldgs. + PCB P.t areas.
OSC Wolfe + START Little survey

Rite in the Rain

6 wSM

SAMPLE

ID

4/27/11

#	Time	Description
01	0845	Roll-off box waste cage
02	0915	Sulfuric & Acid Toles (5) in
03	0935	2 nd containment behind Blue Tx
04	1100	PCB pit - Main Plant
05	1130	Super sacks in SE warehouse
06	1250	CL-2840 liquid drums in
07	1300	CL-427 "Oxidizer / Corrosive"
08	1425	Transformers - NW portion,
09	1455	Lime pile(s) by slag

* Multimeter + Lutron were used to
containers (except acid-type
MR and background levels.
were observed on the multimeter.

wsM

Location

4/27/11

Analysis

in Tx bldg (Blng)
Blue Tx Bldg
Bldg - pH of 1

US Filter Bldg.
drums - US Filter Bldg.
wipe sample + soil sample ... PCB
pile area

pH analysis
pH analysis
pH analysis
pH analysis
pH "

pH + Radioactivity
pH + Radioactivity
pH

survey / screen Tx plant areas +
containers). Lutron readings were < ID
No sustained readings above background

8 WSH

4/27/17

- 1115 Super sack area + east warehouses
 • Collect sample of PCB Pit. pH was in 4'x4'x7' and $\frac{3}{4}$ full of liquid - with oily layer on top (#04)
- 1125 Survey in cold storage noted -
 ~10 totes labeled as 1791 (near pit area) but all were empty.
 3 Totes labeled as 1830 One was full, but had suspect TSI ACM on top of containers, therefore, START did not collect sample.
 * There is likely ACM (from fallen pipe wrap) throughout this area. Areas of graffiti were also observed inside the warehouses. *
- 1830 = Sulfuric Acid (200 gal totes)
 Also observed 10 - 55 gal poly drums (white) marked CL-2840 "Corrosive"
- 1130 Collect sample of 'supersacks' in SE warehouse. Appears to be "lime-type powder" w/ pH = 13. Sample #05
 There were ~ 75 supersacks + Tap flux & carbon bags in this area.
- 1145 Break for lunch

4/27/17

9

- 1230 Continue survey @ chemistry lab bldg. + U.S. Filter bldg.
- 1250 Collect sample of CL-2840 drums (pH = 14) - 2 - 55 gall. drums (#06)
- 1300 + sample CC-427 drum labeled as Oxidizer/Corrosive (pH = 4) conduct peroxide test = 10-30%, + pastille test for oxidizer based on EPA haz-cat field test kit. by osc Cashmere. (Sample #07). 3 drums here.
 Also, 4 totes labeled CC-4882
 Cooling water Tx in this area
- * A small chemistry lab was in this bldg. w/ minor amount of chemical additions in cabinets (see photo)
- 1320 START observed K-61 waste vac boxes (6) (unable to determine if waste was present in boxes) + 3 roll-off boxes (1 empty, 2 - $\frac{1}{3}$ full) of K-61 in the same area.
- 1335 START / ERA entered the "Well Chlorination bldg." on SE part of site. No samples collected here, but mainly contained Lubricants +

10

WSH

4/27/17

gear oil scattered inside + outside the bldg. Several pallets of 3-gal containers of "Res A 90 P" / RHI (labeling more observed in this bldg.)

- the basement was accessed via the steps of the west side of the bldg. The basement looked flooded but did not appear to contain any chemical-type containers or env't threats, other than safety hazards.
- There were about 9 55-gal drums of lubricant in this area =

1425 START collected samples from transformers on the NW part of property past (Ohio START) (T) could not be opened, but 2 appeared to be empty ie looking through the main body opening.

A wipe sample was collected from the rocks below the 3 transformers #08 (wipe) + also from the black soil from the exposed insulator - H₂O 8-soil (see photo).

1455 START/EPA observed several

4/27/17

11

WSH

1455 piles of lime (mixed with debris) located NW of the slag piles. There were ~ 13 piles of varying sizes. START attempted to bag approximately 2,000 yd³. A pH test strip folded screen indicated pH of pile to be 13 standard units.

[Inventory of Hazards]

Many West warehouse-PCB Pit Area

3 - unmarked drums

4 - transformers (on pallets)

4B - Pertek Alco RHI wood-boxed packaging. Duferco Refractories

7 - DPH Casters (plastic bags)
+ graffiti on walls in this area

37 - Arcathium Metallurgical Flux boxes

(blk. carbon powder)

Super SACK Area Warehouse

175 - bags of super sacks + Tap Flux Carbon

30 - pallets of black carbon

6 - drums of gear fluid (EcoGear 220)
+ Tank of H₂O Glycol Hyd. Fluid.

12

WSH

4/27/17

Well Chlorination Bldg.

- - 3 gal. containers (90 per pallet) of RHI ResA9D P
- 8 - 55-gal drums of gear oil/lubricant scattered inside/outsdie of bldg.

Water Tx Plant

- 3 tanks of K_2SO_4 (inside bldg.) + 1 outside bldg.
- 4 1-gal. containers of HCl inside
- 1 - tote of Aluminum Chlorohydrate ($\text{pH}=4$)
- 1 - empty 2,000 gal. used oil tank
- 2 ASTs behind bldg.

Pumphouse

- 1 - 55-gal Flexalone drum (lubricant)

→ ① 2nd Containment = $\text{pH} = 1$
 ② Pit = $\text{pH} = 5$ ($\approx 25,000$ gal)

Breezeway - PrB Pit Area

4B - White poly drums of liquid w/ $\text{pH} = 6 + 7$ (likely water). used for safety barrier.

13

WSH

4/27/17

Lime Piles Area

• white powder tested $\text{pH}=13$
 Approx. 10-12 piles of varying size with estimated volume of 2,000 yd^3 . Piles were mixed with debris (gallots, metal, paper sacks, wood, scrap) - Need better volume estimate.

Transformers • NW corner by Ohio Star Bldg.

3 - (1) damaged rusty, leaking also, (2) Substation near Tx Plant contained 5-large + 10-medium + 20-small + transformers
 → To be assessed under a different program for OSC's.

1600 STREET / EEA leave site.

OSC will remain on site to monitor the Tx plant E&E clean-up of the 2nd containment unit.

✓
4/27/17

Rtem deRan